REMARKS

The Applicants have carefully studied the outstanding Office Action mailed April 23, 2003, and the newly cited art. The present response is intended to be fully responsive to the rejection raised by the Office Action and is believed to place the application in condition for allowance. Further, the Applicants do not acquiesce to any of the Office Action rejections not particularly addressed. Favorable reconsideration and allowance of the application is respectfully requested.

From the outset, the Applicant thanks the Examiner for noting that claims 14, 15, 38 and 39 are allowable, and claims 5-7, 9, 10, 13, 17-19, 24, 29-31, 33, 34, 37 and 41-43 would be allowable if re-written in independent form including all of the limitations of the base claim and any intervening claims. The Applicant also notes Examiner rejected claims 1-4, 8, 11, 12, 14, 16, , 20-23, 25-28, 32, 35, 36 and 40 under 35 U.S.C. §103(e) as being unpatentable by U.S. Patent No. 6,324,279, granted to Kalmanek et al. ("*Kalmanek*") in view of U.S. Patent No. 6,404,736, granted to Arkko et al. ("*Arkko*").

In addition, the Examiner rejected claims 22 under 35 U.S.C. § 103(a) as being unpatentable over *Kalmanek*, in view of *Arkko* and in further view *Newton* (Newton's Telecom Dictionary, 14th Ed., Telecom Books, New York, 1998). The Applicants request withdrawal of these rejections in view of the following discussion.

1. Claimed Invention

At present pending claims, claims 1, 12, 14, 16, 17, 20, 25, 36, 38 and 40 are in independent format. Each of these independent claims includes an element directed to storing call state information in a non-customer-premises network element in the path of a H.323 call. For instance, Claim 1, as amended, provides the element "storing on the edge-routing device call

state information corresponding to a state of the H.323 call." The following list outlines the claim element or elements of independent claims 12, 16, 20, 25, 36, and 40 that are representative of storing call state information in a non-customer-premises network element in the path of a H.323 call.

- Claim 12: "a virtual-distributed gatekeeper device comprising ... a memory for holding call state information, the call state information including information about H.323 calls placed by the at least one H.323 device coupled in communication with the virtual-distributed gatekeeper device"
- Claim 16: "an edge-routing device having a first H.323 port and a memory, the memory containing call state information, the call state information including a call state for an H.323 call on the first H.323 port"
- Claim 20: "the edge-routing apparatus comprising means for storing a call state information about the H.323 call"
- Claim 25: "storing on the edge-routing device call state information corresponding to a state of the H.323 call"
- Claim 36: "[a]n edge-routing device comprising ... a memory for holding call state information about the H.323 call"
- Claim 40: "an edge-routing device having a first H.323 port and a memory, the memory storing call state information about an H.323 call originated from an H.323 terminal coupled to the first H.323 port"

All of the claims that depend from independent claims 1, 12, 16, 20, 25, 36, and 40, in turn, necessarily incorporate the elements of the claims from which they depend. Thus, these

dependent claims include the element directed to storing call state information in a non-customer-premises network element in the path of a H.323 call as well.

2. Claim Rejections under 35 U.S.C. § 103(s)

The Examiner rejected claims 1-4, 8, 11, 12, 14, 16, 20-23, 25-28, 32, 35, 36 and 40 under 35 U.S.C. §103(e) as being unpatentable by *Kalmanek* in view of *Arkko*. In each rejection, the Examiner states that *Kalmanek* "fails to teach storing on the edge device call state information corresponding to a state of the H.323 call and updating the call state information on the edge device after receiving the admission confirmation" as claimed by the Applicants.

The Examiner, however, states that "*Arkko* teaches storing on the edge device call state information corresponding to the state of the H.323 call and updating the call state information on the edge device after receiving the admission confirmation." To support this rejection, the Examiner points to a box in Figure 2 labeled "220," and column 6, lines 63-65 in *Arkko*.

The Applicants note (i) that the specification states that the box labeled 220 is a Network Access Server (NAS), not an edge device as claimed, and (ii) that column 6, lines 63-65 states "[t]he NAS 220 also preferably performs authentication and an accounting functions in connection with communications over the Internet 166." The Applicants also note that *Arkko* does not disclose any information about H.323 calls.

A. The Proposed Combination Does Not Teach All the Elements

According to M.P.E.P. § 2143, in order to establish the required *prima facie* case of obviousness of a claimed invention by applying a combination of references, the proposed combination must teach or suggest all of the elements of the claimed invention.

The Applicants respectfully submit that *Kalmanek, Arkko* and/or a combination thereof does not disclose claimed invention, despite the Examiners contention. In particular, the

Applicants submit that, while call state information may include "appropriate accounting and billing information," and *Arkko* does disclose that the "NAS 220 [t]he NAS 220 also preferably performs authentication and an accounting functions in connection with communications over the Internet 166," it does not disclose ""storing on the edge-routing device call state information corresponding to a state of the H.323 call."

While the background of the *Arkko* states that the NAS is an internal network of devices including electronic devices and one or more edge routers, the Applicants submit that the NAS described in the summary and detailed description of *Arkko* is modified Local Exchange have some NAS functionality, but not the edge device functionality. As indicated throughout the specification of *Arkko*, the NAS is connected to "the Internet 166 ... via external router 168 (e.g., an INET-POP, an edge router, or an access point edge router) over an internal network." *See the specification of Arkko* throughout, and in particular to *Arkko* at col. 6, lines 59-63 and Figures 1 and 2. Given the plain language and term differentiation of *Arkko*, there would be no need to provide an external router if the NAS was or had the functionality of such as device. The Applicants also respectfully submit that *Arkko* does not describe the NAS as having edge router functionality. Consequently, the Applicants submit that even if the NAS stored call state information, it is not an edge device.

Moreover, the Applicants submit that *Arkko* does not disclose storing call state information corresponding to the state of the H.323 call on the NAS or any other device. While *Arkko* does mention call routing logic is performed by the external routers 168, which is a common task carried out by routers, and can be located in the NAS 220 and/or the GT/TS 142, call routing logic is not call state information (e.g., off-hook, dialing, ringing, etc) as claimed, but rather "logic that decides which RP [Remote Processor] 158 will handle an incoming call." *See*

the specification of the present application, at page 4, lines 16-19; *Arkko,* at col. 7 lines 20-30; and *Arkko* at col. 8, line 55 to col. 11, line 30.

As noted above, nowhere does *Arkko* mention anything about an H.323 call. Thus, for the reasons described above, the Applicants submit that *Arkko* does not disclose the claimed element "storing on the edge-routing device call state information corresponding to a state of the H.323 call."

B. A Reference Must Expressly or Impliedly Suggest the Claimed Invention

Additionally, under 35 U.S.C. § 103, to support the conclusion that the claimed invention is directed to obvious subject matter, a reference must expressly or impliedly suggest the claimed invention. The Applicants submit that the combination of *Kalmanek* and *Arkko* not only fails to disclose "storing on the edge-routing device call state information corresponding to a state of the H.323 call," but also teaches away from the claimed elements directed to this subject matter.

Even assuming that the NAS stores call state information, which the Applicants submit is not disclosed in *Arkko*, the combination of *Kalmanek* and *Arkko* fails to teach inherently or explicitly the claimed invention. As stated in the previous Office Action response and agreed to in the latest Office Action, *Kalmanek* (i.e., '288 and '878 provisional applications, which is AT&T's Distributed Open Signaling Architecture (DOSA) specification), stores call state information in the BTI end-points and not the edge routing devices.

The discussion and arguments from the previous Office Action response are incorporated herein by reference. In particular the '288 and the '878 provisional applications explicitly state "[t]he less state that has to be maintained in the network, the better" and "no piece of network equipment knows whether a phone is off-hook and dialing, or whether the phone is ringing, or disconnected but not yet hung up[; ... s]uch state information is only kept at the BTI:" *See the*

'288 provisional application at page 15, para. 4 to page 17, para. 3; and *the '878 provisional application,* at page 16, para. 1.

In support of teaching away, the Applicants point to the '288 and '878 provisional applications, which state:

> "[h]aving the state of each individual call maintained in network servers, while achievable, does not scale cost effectively. The less state that has to be maintained in the network, the better. We use the intelligence in the end-terminals to maintain the necessary information that is needed for calls that are currently in progress with them, rather than requiring network servers to keep this information. ... The servers in the network (gatekeeper) do not retain any per-call state. This enables us to recover from failures of individual servers in the network by moving to another without impacting ANY of the calls currently in progress in any way." *See the '288 provisional application,* at page 15, para. 5 and *the '878 provisional application,* at page 15, para. 2 to page 16, para. 1.

> "[T]he procedure to set up a new call is a simple transaction with the Gate Controller, which does the authentication and authorization, passes the permission to make a connection to the edge router, and then "forgets" everything about that call. There are two major advantages to this design: First the reliability of the service does not depend on the reliability of an individual Gate Controller throughout the length of the call, and secondly, it removes many complex synchronization problems where two (or more) entities need to have simultaneously accurate information. Since the interactions with the Gate Controllers are simple stateless transactions, there is no necessity for consecutive calls to be processed by the same Gate Controller. Gate Controller crashes affect only the calls currently in transition, and not stable conversations. Further, it is likely that most calls in transient states can be recovered and successfully established through a backup or spare Gate Controller. We believe this design principle will enable us to operate in large scale, cost-effectively. Furthermore, it places the function of managing the state of a call where it belongs — at the BTI. An existing call would therefore be impacted only by the BTI failing to perform its function, which would be the case anyway even if it didn't maintain state. *See the '878 provisional application,* at page 16, para. 1.

On the other hand, *Arkko* is directed to "a method and apparatus [that] enables a Network Access Server together with a telecommunications switch to route incoming calls only to devices that have sufficient resources to provide a connection to the Internet." *See the Abstract of Arkko.* Moreover, the method and apparatus of Arkko is directed to (i) a set of devices, RPs, reformat incoming data from subscribers to a desired Internet Protocol, wherein during operation, each RP

performs self-checks to determine whether sufficient resources exist within the RP for providing Internet communication; and (ii) if sufficient resources do not exist (e.g., an IP address pool is depleted within a particular RP), then that RP signals as such to call routing logic. *Id.*

In addition, *Arkko* discloses that "the call routing logic will not route calls for that individual ISP to that particular RP until the call routing logic receives another signal indicating that the depleted resource has been replenished." *Id.* Thus, *Arkko* is directed to remote processors that are operable to perform specialized call routing based on the availability or non-availability of resources. *See the specification of Arkko throughout.*

Furthermore, *Arkko* discloses that the call routing logic is to be maintained not at the RPs, but in a network-centric device, such as the central processor, GS/TS, and/or the NA; all of which are upstream form the edge routing devices. See *Arkko* at col. 7, lines 16-30. Even with the assumption that *Arkko* discloses storing call state information in the NAS, *Kalmanek* explicitly states that call state information is to be stored in the BTI end-points, not the edge routing devices or other network device. The Applicant submits that one skilled in the art would not combine *Kalmanek* and *Arkko* given their disparate teachings.

As noted in the last paragraph, *Arkko* discloses that the call routing logic is to be maintained in a network-centric device. *Id.* at col. 7, lines 16-30. If any of these devices would fail, the information contained on them would be lost. Given that a large number of the remote processors are connected to the central processor, GS/TS, and/or the NAS, any information stored for the remote processors would be lost.

Even assuming that the central processor, the GS/TS and/or the NAS were to store call state information, one problem that present invention is intended to overcome still exits when if attempting to combine *Kalmanek* and *Arkko*. The Applicants direct the Examiner to the

background, summary and detailed description of the present application. One of the problems with a centralize resource, such as an H.323 gatekeeper, is that when the gatekeeper fails or is circumvented the information stored on the gatekeeper is lost or not stored in the first place, respectively. The background of the present application states:

> "To provide [billing and other accounting services] services, the H.323 gatekeeper can be coupled to back-end servers (BESs) that provide authentication, accounting, billing, and other services.
>
> The H.323 gatekeeper is also responsible for managing access to the network and controlling bandwidth usage. In order to accomplish these tasks, the prior art H.323 gatekeeper retains call status information throughout the call. This means that the H.323 gatekeeper includes data about calls in progress. When the call is finished, the H.323 gatekeeper interfaces with the BESs to update the billing and other information.
>
> If the H.323 gatekeeper fails, all of the information about the calls handled by that H.323 gatekeeper are lost. In a central office or cable system installation, that could result in the loss of the accounting and billing data for ten thousand or more calls in progress. Also, replacing a failed H.323 gatekeeper is difficult because the call state information stored on the H.323 gatekeeper would have to be transferred to the replacement H.323 gatekeeper to prevent disruptions.
>
> Another problem of the prior art is that it may be possible to circumvent the H.323 gatekeeper and thus the billing and access control systems. Techniques such as IP spoofing might be used to circumvent the H.323 gatekeeper and place calls without authorization.
>
> If the prior art techniques are used, the H.323 gatekeeper represents a single non-redundant point of failure. Therefore, it is desirable to have a method of improving the reliability of the H.323 gatekeeper. If the prior art techniques are used, the H.323 gatekeeper billing and access control functions can be circumvented. Therefore, it is desirable to have a method of ensuring that the billing and access control functions of the H.323 gatekeeper cannot be circumvented.

Even with the assumption that the NAS stores call state information, the Applicants submits that the system of *Arkko* suffer the same fate as the H.323 gatekeeper when the central processor, GS/TS, and/or the NAS fail. The claimed invention, on the other hand, does not suffer, because the call state information is maintained in the edge router. *See the claims, summary and detailed description of the present application.*

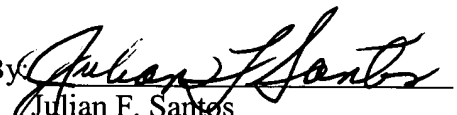
In light of the foregoing, even if *Arkko* stores call state information in the central processor, GS/TS, and/or the NAS, the Applicants respectfully submit that the combination of *Kalmanek* an *Arkko* fail to implicitly or explicitly teach "storing on the edge-routing device call state information corresponding to a state of the H.323 call." The Applicants also submit the claimed invention is not disclosed in the cited art, and thus, the remaining un-allowed independent claims 1, 12, 16, 20, 25, 36, and 40 are allowable. The Applicant further submit that the remaining un-allowed dependent claims, which necessarily incorporate the elements of the independent and intervening claims from which they depend, are allowable as well.

3. Conclusion

In view of the foregoing remarks, the Applicants submit that the pending claims are in good and proper form for allowance, and the Applicants respectfully request the Examiner to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would otherwise expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at 312-913-3304.

Respectfully submitted,

Date: September 23, 2003

By: 

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